

**CUSTOMER NO.: 24498**  
**Serial No. 09/640,104**  
Reply to Office Action dated: 7/31/06  
Response dated: 10/16/06

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**OCT 16 2006**  
**PATENT**  
**PD990048**

**Amendments to the Drawings**

The attached drawing sheet includes changes to Figure 2. This sheet, which includes Figures 1A, 1B and 2, replaces the original drawing sheet including Figures 1A, 1B and 2.

In Figure 2, a block with a reference number 5 has been added having a descriptive legend "frame buffers". Support for the addition of block 5, "frame buffers", can be found in the Applicant's Specification, specifically on page 6, lines 19-23.

Attachment: Replacement Sheet

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**REMARKS**

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In the Office Action, the Examiner noted that claims 1-14 are pending in the application and that claims 1-14 stand rejected. By this response, claims 4, 11 and 14 are amended to more clearly point out the invention of the Applicant and not in response to prior art. All other claims are unamended by this response.

In view of the following discussion, the Applicant respectfully submits that none of these claims now pending in the application are anticipated under the provisions of 35 U.S.C. § 102 or rendered obvious under the provisions of 35 U.S.C. § 103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §112. Thus the Applicant believes that all of these claims are now in allowable form.

**Objections**

**A. Drawings**

The Examiner objected to the Applicant's drawings under 37 CFR 1.83(a) pointing out that the drawings must show every feature of the invention specified in the claims. The Examiner specifically states that claim 3 "two frame buffers" is not shown in the drawings.

In response, the Applicant is submitting herewith replacement Figure 2 including a block with a reference number 5 having a descriptive legend "frame buffers". Support for the addition of block 5, "frame buffers", can be found in the Applicant's Specification, specifically on page 6, lines 19-23. The Applicant's Specification has also been amended to include a reference to the frame buffers 5. Having done so, the Applicant respectfully requests that the Examiner's objection to the Applicant's drawings be withdrawn.

**Rejections**

**A. 35 U.S.C. § 112**

The Examiner rejected claims 4 and 11 under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. The Examiner specifically states that claims 4 and 11 both recite the technical feature of

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"decoding B frames without storing its content" and that because it is inherent in any MPEG decoding loop to have storage in the loop processing. As such the Examiner alleges that claims 4 and 11 as claimed are indefinite and unclear in view of the decoder having storage of all frame content, during the decoding steps to decode inside the decoder loop.

In response, the Applicant has herein amended claims 4 and 11 to positively recite "decoding a B-frame without storing its content in a frame buffer". Having made the above described amendment, the Applicant respectfully submits that the basis for the Examiner's rejection of the Applicant's claims 4 and 11 under 35 U.S.C. §112 has been removed and that claims 4 and 11 are now clear and definite. Therefore, the Applicant respectfully requests that the Examiner's rejection of claims 4 and 11 be withdrawn. The Applicant submits that claims 4 and 11 now satisfy the requirements of 35 U.S.C. §112 and are patentable thereunder.

#### **B. 35 U.S.C. § 102**

The Examiner rejected claims 1-3, 5-10 and 12-14 35 U.S.C. § 102(e) as being anticipated by Duruoz et al. (U.S. Patent No. 6,654,539, hereinafter "Duruoz"). The rejection is respectfully traversed.

"Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1983)). (emphasis added). The Applicant respectfully submits that Duruoz fails to teach each and every element of at least the Applicant's claim 1, which specifically recites:

"A method for reproducing a digital data stream containing program information for trick mode display, said method including the steps:

- a) decoding the incoming digital data stream in normal playmode,
- b) creating a group of picture structure history during said decoding step,
- c) storing said history,
- d) editing for playback in trick mode said digital data stream using said history,
- e) decoding said digital data stream edited for trick mode display."

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In support of at least claim 1, the Applicant in the Specification specifically recites:

"As explained before it is necessary to generate the GOP structure in advance to do such trick modes. The inventive solution shown here is a GOP structure preanalysis using the existing decoder hardware. By using this solution no costly preanalysis hardware or software is required.

As shown in Figure 2 the GOP history is generated by running the decoder through the GOP and logging the type of picture. During this invisible decoder run, the display is not update. The logged GOP history information can be used later on to control the trick mode editing and decoding the trick mode control unit." (See Specification, page 6, line 24 through page 7, line 1).

As clearly taught in at least the portion of the Applicant's disclosure presented above, in the invention of the Applicant, a GOP history is generated by an existing decoder, the history listing the type of pictures in the GOP and their order. The GOP history is then later used to control the trick mode editing. More specifically the Applicant specifically recites:

"Editing allows the original bitstream to be changed in such a way that for the trick mode decoding the required parts are extracted and prepared for the standard decoding hardware. Advantageously the GOP structure is created during normal playback mode hence pre-parsing software or special pre-parsing hardware is avoided." (See Specification, page 2, line 28 through page 3, line 1).

And

"In the decoder two frame buffers are used for decoding the edited bitstream for trick mode operation so that the decoding is performed invisibly. In order to avoid extra buffers during trick mode operation the decoding of the B-frames of the edited bitstream is performed without storing the reconstructed picture.

Preferably playback in the mode is controlled by a trick mode controller whereby the trick mode controlled functions the following way:  
the trick mode controller receives a command from a mode request unit,

the trick mode controller requests, based on the mode request, the content of the group of picture history memory,

the trick mode controller controls a pick-up device for data stream selection,

the trick mode controller enables the bitstream editing for trick mode application,

the trick mode controller controls the decoding,

the trick mode controller initiates a display switch for displaying the target picture.

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In an alternative arrangement trick mode control functions as follows. The trick mode controller receives a command from a mode request unit, and based on the mode request the trick mode controller requests that content of the group of picture history from the memory. The trick mode controller controls a pick-up device for data stream selection, and enables bitstream editing for trick mode application." (See Specification, page 3, lines 5-25).

As clearly evident from at least the portions of the Applicant's disclosure presented above, in various embodiments of the Applicant's invention, a history of a GOP structure of a received bistream is created during normal playback and is stored in a memory. Subsequently, during a trick mode, the GOP history is used to help position a pick-up to select a proper position in a data stream for selection of a required picture which is extracted and prepared for the standard decoding hardware. That is, in the invention of the Applicant, the bitstream order is edited using the stored history of the GOP structure and order to provide a proper order for decoding with existing hardware. In accordance with the present invention, a reconstructed GOP picture having an appropriate decoding order does not have to be stored in a buffer as in prior art applications, because the stored GOP history in accordance with the present invention, enables the invention of the present invention to extract and prepare the appropriate pictures for the standard decoding hardware.

In contrast to the invention of the Applicant, Duruoze teaches a method for reproducing a digital data stream containing program information for trick mode display in which the complete decoded frames are stored in the frame buffers. As such in Duruoze for trick mode, frames do not need to be decoded again using the different pictures from the group of pictures. More specifically, in Duruoze frames are decoded and stored in frame buffers. During trick modes in Duruoze, all frame buffers are evaluated to check whether a previous frame is stored in one of the frame buffers to ensure that decoded frames are displayed in the proper order. However, the Applicant respectfully submits that Duruoze absolutely fails to teach, suggest or anticipate at least "editing for playback in trick mode said digital data stream using said history" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1.

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More specifically, as previously recited above, in the invention of the Applicant a history of a GOP structure of a received bitstream is created during normal playback and is stored in a memory. Subsequently, during a trick mode, the GOP history is used to edit the bitstream by using the GOP history to position a pick-up to select a proper position in a data stream for selection of a required picture which is extracted and prepared for the standard decoding hardware such that decoding can occur in a proper order to enable a trick mode display. In contrast to the invention of the Applicant, there is absolutely no teaching, suggestion or disclosure in Duruoz for editing a digital data stream for playback as taught by the Applicant's Specification and claimed by at least the Applicant's claim 1. Instead, Duruoz teaches decoding a received bitstream as received and storing the complete decoded frames in frame buffers.

The solution according to the invention has the advantage that it requires only a reduced number of frame buffers, i.e. one display frame buffer and two frame buffers for trick mode decoding. The solution disclosed by Duruoz et al. needs a display frame buffer, two decoding frame buffers and at least one decoded frame buffer for storing a decoded frame. As Duruoz does not give any hint to generate a GOP history to enable a fast decoding in trick mode with a reduced number of frame buffers, the Applicant respectfully submits that Duruoz fails to teach each and every element of the claimed invention, arranged as in the claim as required for anticipation. Therefore, the Applicant respectfully submits that the teachings and disclosure of Duruoz do not anticipate the Applicant's invention, at least with respect to independent claim 1.

Therefore, the Applicant submits that for at least the reasons recited above, independent claim 1 is not anticipated by the teachings of Duruoz and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Likewise, independent claim 8 recites similar relevant features as recited in the Applicant's independent claim 1. As described above, there is absolutely no teaching, suggestion or disclosure in Duruoz for at least "an editor coupled to said memory for editing said digital data stream using said history for playback in trick mode" as claimed by the Applicant's independent claims 1 and 8. As such, the Applicant respectfully submits that for at least the reasons recited above

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independent claim 8 is also not anticipated by the teachings of Duruo~~z~~ and also fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Furthermore, dependent claims 2-3, 5-7, 9-10 and 12-14 depend either directly or indirectly from independent claims 1 and 8 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that dependent claims 2-3, 5-7, 9-10 and 12-14 are also not anticipated by the teachings of Duruo~~z~~. Therefore the Applicant submits that dependent claims 2-3, 5-7, 9-10 and 12-14 also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

#### **C. 35 U.S.C. § 103**

The Examiner rejected claims 4 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Duruo~~z~~ et al. (U.S. Patent No. 6,654,539, hereinafter "Duruo~~z~~"). The rejection is respectfully traversed.

Regarding claims 4 and 11, the Examiner submits that Duruo~~z~~ fails to particularly disclose decoding a B frame without storing its content. However, the Examiner takes official notice that frames after a decoder can be sent to a rendering device such as a digital display without any storing with respect to the output of the MPEG decoder.

The Applicant has herein amended claims 4 and 11 to particularly recite the technical feature of "decoding a B-frame without storing its content in a frame buffer". The Applicant submits that Duruo~~z~~ absolutely fails to teach, suggest or disclose "decoding a B-frame without storing its content in a frame buffer" as taught in the Applicant's Specification and claimed by at least the Applicant's claims 4 and 11. In fact, the Applicant respectfully submits that Duruo~~z~~ teaches away from such a technical feature. That is, in Duruo~~z~~ decoded frames, including B-frames are all stored in frame buffers in contrast to the invention of the Applicant as claimed in at least claims 4 and 11.

As such and for at least the reasons described above, the Applicant respectfully submits that the teachings of Duruo~~z~~ fail to teach, suggest or make

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obvious the invention of the Applicant with regard to at least the Applicant's amended claims 4 and 11.

Therefore, the Applicant submits that claims 4 and 11, as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

**Conclusion**

Thus the Applicant submits that none of the claims, presently in the application, are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. § 112. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

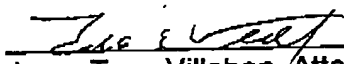
If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion, it is respectfully requested that the Examiner telephone the undersigned.

If any fee is due and not paid for, the Commissioner is authorized to please charge the additional fee to Deposit Account No. 07-0832.

Respectfully submitted,

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October 16, 2005



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obvious the invention of the Applicant with regard to at least the Applicant's amended claims 4 and 11.

Therefore, the Applicant submits that claims 4 and 11, as they now stand, fully satisfy the requirements of 35 U.S.C. § 103 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

Conclusion

Thus the Applicant submits that none of the claims, presently in the application, are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Furthermore, the Applicant also submits that all of these claims now satisfy the requirements of 35 U.S.C. §112. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

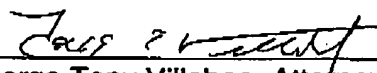
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